

Applicant : Kiyoshi Mita
Serial No. : 10/813,782
Filed : March 31, 2004
Page : 4 of 7

Attorney's Docket No.: 14225-049001 / F1040149US00

Amendments to the Drawings:

The attached replacement sheets of drawings includes changes to Fig. 4 and Fig. 7 and replaces the original sheets including Fig. 4, Fig. 5, Fig. 6 and Fig. 7.

In Figure 4, the line from reference number 12 has been modified to point to the first conductive pattern; and reference numeral 14 has been added in one place to indicate a wire.

In Figure 7, the designation "Prior Art" was added.

Attachments following last page of this Amendment:

Replacement Sheets (2 pages)
Annotated Sheets Showing Change(s) (2 pages)

REMARKS

Claims 1-3 were rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,216,278 (Lin et al.).

Claim 1 has been amended to clarify that the step portion is in a periphery of the mounting substrate and that the conductive pattern is formed on a surface of the mounting substrate located inside the step portion. Referring, for example, to FIG. 1B of the present application, the step portion 15 is in a periphery of the mounting substrate 11. Furthermore, a conductive pattern 12 is formed on a surface of the mounting substrate 11 inside the step portion 15. As discussed, for example, on page 6 of the present application, having a step portion in the mounting substrate as recited by claim 1 increases the adhesive strength between the mounting substrate and the sealing resin.

The Lin et al. patent discloses a semiconductor device 10 that includes a carrier substrate 12. (FIG. 1) An electronic component 18 is attached to the carrier substrate 12 via die bond 20. A first wiring layer 30 and a second wiring layer 33 are positioned adjacent surfaces of the carrier substrate 12. The electronic component 18 is electrically connected to the first wiring layer 30 via electrical connections 22. Plastic package mold 36 covers portions of the carrier substrate 12 and seals the electronic component 18.

The Lin et al. patent neither discloses nor suggests a “step portion” in a periphery of a mounting substrate and a conductive pattern formed on a surface of the mounting substrate located inside the step portion, as recited by claim 1. In contrast, the carrier substrate 12 disclosed in the Lin et al. patent, upon which an electronic component 18 is mounted, is flat. There is no step portion.

The Office Action alleges that the Lin et al. patent discloses a “step portion” between solder mask 38 and the die attach surface 14 of carrier substrate 12. (See FIG 1) However, that portion of FIG. 1 merely shows a solder mask 38 that bends to contact a die attach surface 14. The fact that two discrete elements (*i.e.*, the solder mask 38 and the die attach surface 14) disclosed in the Lin et al. patent can be combined to form the shape of a step is not the same as a mounting substrate, upon which a semiconductor element is fixed, having a step portion as

recited by claim 1. Furthermore, the alleged “step portion” disclosed in FIG. 1 of the Lin et al. patent does not increase the adhesive strength between the die attach surface 14 and the plastic package mold 36.

Claim 1 should be allowable for at least the foregoing reasons.

Claims 2 and 3 depend from claim 1 and, therefore, should be allowable for at least the same reasons as claim 1.

The Office Action indicated that FIG. 7 should be designated by a legend such as “Prior Art.” In response, Applicant has added the designation “Prior Art” to FIG. 7. Applicant requests acceptance of FIG. 7, as amended.

FIG. 2B was objected to because reference number “12D” allegedly was not disclosed in the specification. That is incorrect. Applicant respectfully directs the Examiner’s attention to the first paragraph on page 10, which states, “[t]o implement the BGA or LGA structure, wiring portions 12D are extended from the respective bonding pads 12A toward the center.” Applicant, therefore, requests withdrawal of this objection.

FIG. 4 was objected to because reference characters “12” and “14” were both used to designate wires. Applicant has corrected that typographical error and respectfully requests withdrawal of this objection.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

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No fee is believed to be due. However, please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 5/3/05

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ANNOTATED SHEET SHOWING CHANGES

FIG.4

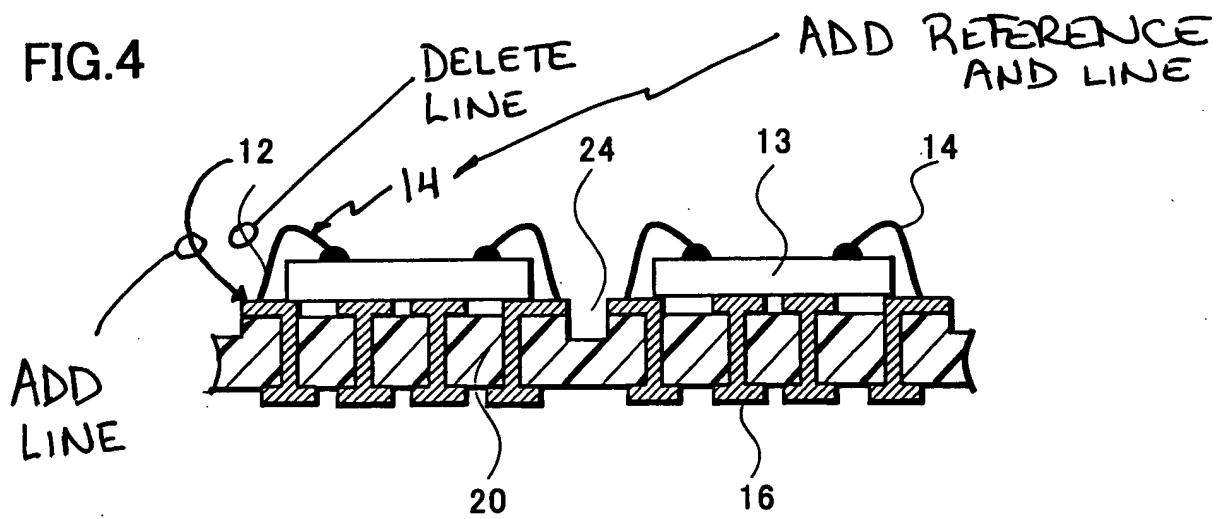
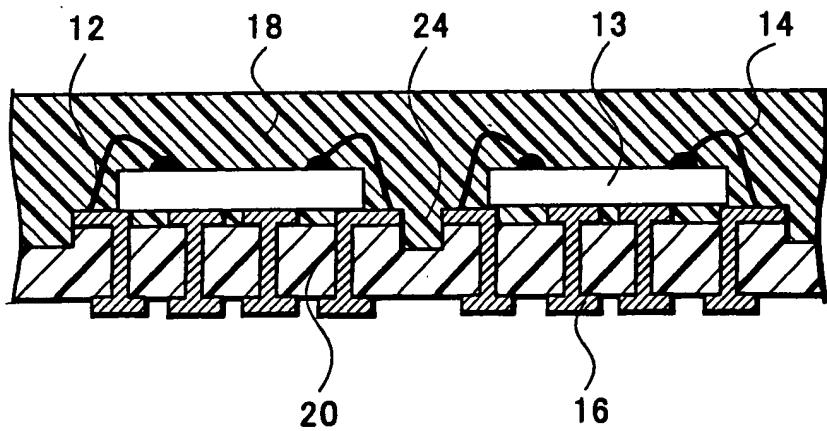


FIG.5



ANNOTATED SHEET SHOWING CHANGES

FIG.6

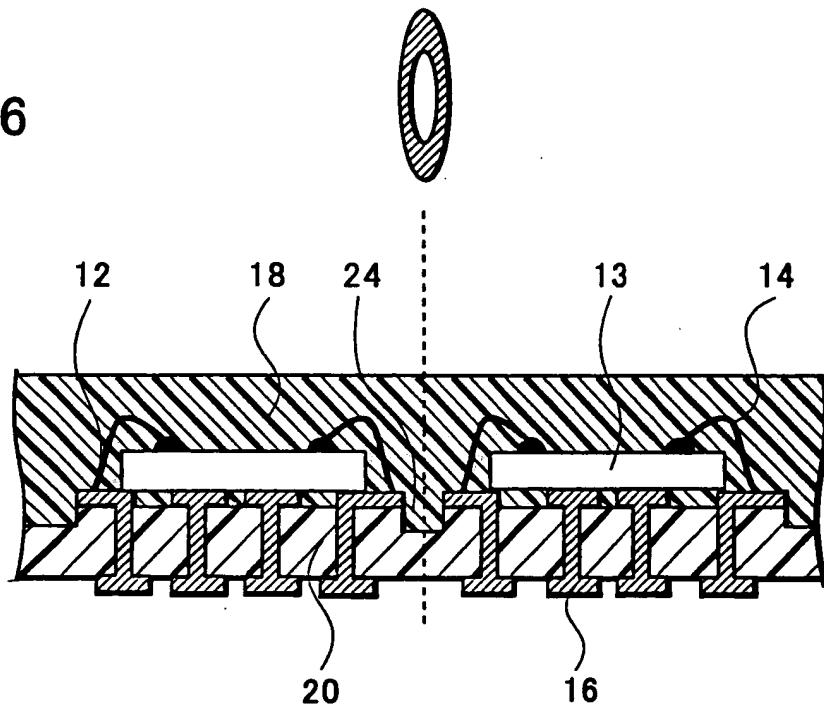


FIG.7

